

Listing and Amendments to the Claims**10/522115****DT01 Rec'd PCT/PTC 24 JAN 2005**

This listing of claims will replace the claims that were published in the PCT Application and the International Preliminary Examination Report:

- 1.- (currently amended) An oxide cathode for an electron gun comprising
- a cathodo-emissive layer (3)-basically made of alkaline earth oxides or of a mixture of such oxides,
 - a metallic substrate (1)-having a top face (111)-onto which the cathodo-emissive layer (3)-is deposited, and a bottom face (122)-opposite to said top face, containing a plurality of reducing agents which are able to reduce said oxides under conditions of operation of said electron gun, said plurality including a first reducing agent Mg and a second reducing agent Si or Al, ~~characterized in that~~ wherein:
- on the said top face (111), the Mg weight concentration is superior to 0.005 %, the second reducing agent weight concentration is inferior or equal to 0.025 %, and the refractory metals weight concentration is inferior or equal to 3 %, where so-called refractory metals are selected from the group consisting of W, Mo, Re,
 - on the said bottom face (122), the Mg weight concentration is inferior to the Mg weight concentration on the said top face, and the second reducing agent weight concentration is superior to the second reducing agent weight concentration on the said top face and superior to 0.02 %,
 - the thickness E of the said metallic substrate is inferior or equal to 100 μm .
- 2.- (currently amended) An oxide cathode according to claim 1 ~~characterized in that~~ wherein:
- from the said top face (111)-up to a top depth of at least 20 μm into said substrate, the Mg weight concentration related to this top face is superior to 0.005 %, the second reducing agent weight concentration related to this top face is inferior or equal to 0.025 %, and the refractory metals weight concentration related to this top face is inferior or equal to 3 %,

- from the said bottom face (122) up to a bottom depth of at least 10 μm into said substrate, the Mg weight concentration related to this bottom face is inferior to the said Mg weight concentration related to the top face, and the second reducing agent weight concentration related to this bottom face is superior to the said second reducing agent weight concentration related to the top face and is superior to 0.02 %.

3.- (currently amended) An oxide cathode according to ~~any one of the preceding claims, characterized in that~~ claim 1, wherein the Mg weight concentration related to the bottom face is inferior or equal to 0.004 %.

4.- (currently amended) An oxide cathode according to ~~any one of the preceding claims, characterized in that~~ claim 1, wherein the second reducing agent weight concentration related to the top face is superior to 0.01 %.

5.- (currently amended) An oxide cathode according to ~~any one of the preceding claims, characterized in that~~ claim 1, wherein the second reducing agent weight concentration related to the bottom face is superior to 0.05 %.

6.- (currently amended) An oxide cathode according to ~~any one of the preceding claims, characterized in that~~ claim 1, wherein the second reducing agent weight concentration related to the bottom face is inferior to 0.2 %.

7.- (currently amended) An oxide cathode according to ~~any one of the preceding claims, characterized in that~~ claim 1, wherein, from the said bottom face (122) up to a depth of at 15 μm into said substrate, the Cr weight concentration is superior or equal to 12 %.

8.- (currently amended) An oxide cathode according to ~~any of claims 2 to 7, characterized in that~~ claim 2, wherein the said substrate (1) comprises two superimposed bonded metallic layers : a top layer (11) and a bottom layer (12).

9.- (currently amended) An oxide cathode according to claim 8,
~~characterized in that~~ wherein the said bottom layer ~~(12)~~ is made of nichrome.

10.- (currently amended) An oxide cathode according to ~~any one of the~~
~~preceding claims, characterized in that~~ claim 1, wherein alkaline earth oxides
are selected from the group consisting of BaO, SrO and CaO or BaO, SrO.

11.- (currently amended) An oxide cathode according to ~~any one of the~~
~~preceding claims, characterized in that~~ claim 1, wherein said plurality of
reducing agents further includes elements which are selected from the group
consisting of Cr and Zr.

12.- (currently amended) An oxide cathode according to ~~any one of claims 1~~
~~to 11, characterized in that~~ claim 1, wherein it is a "one-piece" cathode.

13.- (currently amended) An oxide cathode according to ~~any one of claims 1~~
~~to 11, characterized in that~~ claim 1, wherein it is a "two-piece" cathode.

14.- (currently amended) Electron gun having an electron source
~~characterized in that~~ wherein said electron source is a cathode according to
~~any one of the preceding claims~~ claim 1.

15.- (currently amended) Cathode-ray tube ~~characterized in that~~ wherein it
includes at least an electron gun according to claim 14.